## REMARKS

Claim 18 has been amended. Claim 1-21 are pending in the case. Further examination and reconsideration of pending claims 1-21 are hereby respectfully requested.

## Section 112, second paragraph, Rejections

Claims 1, 16, and 18 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant respectfully traverses these rejections.

The Office Action states that "Claims 1 and 16 provide for the uses of correlating defects, but, since the claims do not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced." (Office Action – page 2, emphasis in original). However, claims 1 and 16 do not claim the use of correlating defects. Instead, claims 1 and 16 are method claims that recite a correlating step. In particular, claim 1 recites, in part: "correlating a backside defect detected on a specimen with a frontside defect detected on the specimen." Claim 16 recites in part: "correlating a backside defect detected on a backside of a specimen with a frontside defect detected on a frontside of the specimen." Therefore, claims 1 and 16 do, in fact, recite active, positive steps (e.g., the correlating steps). Accordingly, Applicant has not attempted to claim a process without setting forth any steps involved in the process that would give rise to an issue of indefiniteness under 35 U.S.C. 112, second paragraph. In particular, both claims 1 and 16 include a step (e.g., the correlating step) involved in the method. As such, claims 1 and 16 are definite.

The Office Action states that "In re claim 18, the examiner presumed that the limitation 'larger than the backside defect' (at line 2) should have been – larger than the **frontside** defect --." (Office Action -- page 2, emphasis in original). Claim 18 has been amended to recite, in part: "further comprising defining the frontside defect as a geometrical figure having lateral dimensions larger than the frontside defect, wherein the one or more proximity criteria are satisfied if at least a portion of the geometrical figure is opposite to at least a portion of the backside defect." Support for the amendments to claim 18 can be found in the Specification as originally filed, for example, on page 26, line 13 to page 27, line 8. Applicant respectfully submits that claim 18 is definite in light of the content of the Specification. Definiteness of claim language must be analyzed, not in a vacuum, but in light of: (A) The content of the particular application disclosure. MPEP 2173.02.

For at least the reasons set forth above, claims 1, 16, and 18 are definite. Accordingly, removal of the § 112, second paragraph, rejections of claims 1, 16, and 18 is respectfully requested.

## Section 101 Rejections

Claims 1 and 16 were rejected under 35 U.S.C. § 101 "because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process under 35 U.S.C. 101." (Office Action -- page 2, emphasis in original). Applicant respectfully traverses these rejections. In particular, as set forth in detail above, claims 1 and 16 do not recite a use. In addition, as set forth in detail above, claims 1 and 16 recite steps involved in the claimed method. Therefore, claims 1 and 16 have properly defined a process. For at least the reasons set forth above, the basis for the § 101 rejections of claims 1 and 16 is improper. Accordingly, removal of the § 101 rejections of claims 1 and 16 is respectfully requested.

## Section 102 Rejections

Claims 1, 3, 8-14, 16, and 19 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,134,343 to Nichani et al. (hereinafter "Nichani"). Claims 1, 3, 8, 10, 11, 13-16, and 19-21 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,829,559 to Bultman et al. (hereinafter "Bultman"). As set forth in detail below, the § 102 rejections of claims 1, 3, 8-16, and 19-21 are respectfully traversed.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987), MPEP § 2131. The cited art does not disclose all limitations of the currently pending claims, some distinctive limitations of which are set forth in more detail below.

**The cited art does not teach correlating a backside defect detected on a specimen with a frontside defect detected on the specimen.** Independent claim 1 recites in part:

"correlating a backside defect detected on a specimen with a frontside defect detected on the specimen." Independent claim 16 recites similar limitations.

Nichani discloses a system or method for detecting a defect within a semi-opaque enclosure. Nichani states that "A first digital image is captured from the first channel light reflected off the first external surface of the semi-opaque enclosure. More specifically, the first digital image may be a reflected-light image." (Nichani -- col. 6, lines 24-26). Nichani also states that "A second digital image is captured from second channel light navigating the object inside the enclosure and emanating from the first external surface of the enclosure. More specifically, the second digital image may be a transmitted-light image." (Nichani -- col. 6, lines 28-32). In addition, Nichani states that "FIG. 3A illustrates reflected-light image 512, and FIG. 3B illustrates transmitted-light image 514...When one of the images shown in FIGS. 3A and 3B is subtracted from the other, the background information is removed, and only object 516 remains." (Nichani -- col. 8, lines 40-48). Therefore, Nichani teaches detecting defects or objects on only one surface (i.e., the inner surface of a bottle) by subtracting a reflected light image from a transmitted light image or vice verse. Consequently, Nichani does not teach detecting defects on different sides of the bottle. As such, Nichani cannot not teach correlating a backside defect detected on a specimen with a frontside defect detected on the specimen, as recited in claims 1 and 16. Therefore, Nichani does not teach all limitations of claims 1 and 16.

Bultman discloses methods and systems for determining a presence of macro and micro defects on a specimen. Bultman, however, does not disclose correlating a backside defect detected on a specimen with a frontside defect detected on the specimen. For example, Bultman states that "processor 264 and processor 378 may be configured to determine at least one characteristic of macro defects on a front side and a back side of a specimen. In addition, one or more characteristics of defects may include, but are not limited to, a presence of defects on a surface of a specimen, a type of defects on a surface of a specimen, a number of defects on a surface of a specimen, and a location of defects on a surface of a specimen." (Bultman -- col. 135, lines 20-27). Although Bultman discloses detecting defects and determining information about the defects on the front side and the back side of the specimen, Bultman does not teach correlating backside defects with frontside defects.

The Office Action states that "Bultman et al. teach correlating defects information from the frontside and the backside of the specimen (col. 86, lines 33-46, col. 135, lines 12-23) by *comparing* the determined properties from the frontside and the backside (col. 65, lines 50-52, col. 68, lines 40-45)." (Office Action -- page 6, emphasis in original). However, Bultman does not teach comparing properties of the backside with properties of the frontside as contended in the Office Action. In particular, Bultman states that "the method may include comparing the determined properties of a specimen and determined properties of a plurality of specimens." (Bultman -- col. 72 – lines 20-22). Therefore, Bultman discloses comparing properties of different specimens. Bultman also states that "the method may include comparing properties of a specimen determined at a first location on the specimen to properties of the specimen determined at a second location on the specimen. As such, the method may include monitoring and evaluating a semiconductor fabrication process using a within wafer control technique." (Bultman -- col. 72, lines 25-30). Therefore, Bultman discloses comparing properties of the specimen at different locations on the specimen. However, Bultman does not disclose that the different locations are on different surfaces of the specimen. In addition, as is known in the art, within wafer control involves controlling properties across a surface of the specimen (e.g., a frontside of the specimen). Therefore, Bultman does not teach that the locations at which the properties are compared are on a frontside and a backside of the specimen. Bultman further states that "the method may also include comparing the determined properties of a specimen to a predetermined range for each property." (Bultman -- col. 72, lines 31-33). Consequently, although Bultman teaches comparing information about defects to a variety of other information, Bultman does not teach comparing defects detected on the frontside of a specimen to defects detected on the backside of the specimen. As a result, Bultman does not teach correlating defects on a frontside and a backside of a specimen by comparing properties on the frontside and the backside as contended in the Office Action.

The Office Action states that "Bultman et al. teach correlating defects information from the frontside and the backside of the specimen (col. 86, lines 33-46, col. 135, lines 12-23) by...*determining relationship* between the determined properties (col. 65, lines 22-23)." (Office Action – page 6, emphasis in original). However, Bultman states that "the processor may be configured to determine a relationship between a presence of defects on the surface of a resist layer formed on a specimen and a monitored temperature and/or humidity of the resist apply chamber." (Bultman -- col. 65, lines 15-19). Therefore, Bultman teaches determining a relationship between one property of a specimen and one or more parameters of a process (e.g., temperature, humidity, etc.). However, a relationship between a property and a parameter such as temperature or humidity cannot be used to correlate defects on a frontside and a backside of a specimen. As such, Bultman does not teach correlating defects on a frontside and a backside of a specimen by a relationship as contended in the Office Action.

The Office Action states that "With the comparisons of the determined properties detected on both the front side 40a and the back side 40b of the specimen 40, it would able to distinguish if a portion of the backside defects is opposite to a portion of the frontside defects." (Office Action - page 6). However, as set forth in detail above, Bultman does not teach comparing determined properties on both the frontside and the backside of the specimen. Therefore, the methods and systems of Bultman cannot distinguish if a portion of a backside defect is opposite to a portion of a frontside defect as contended in the Office Action. In addition, even if the methods and systems of Bultman generate information that could be used to correlate defects on the frontside and backside of a specimen, the methods and systems of Bultman are not inherently capable of performing such a correlation. Therefore, the methods and systems of Bultman are not inherently capable of performing the presently claimed correlating. As such, Bultman does not teach correlating a backside defect detected on a specimen with a frontside defect detected on the specimen, as recited in claims 1 and 16. Therefore, Bultman does not teach all limitations of claims 1 and 16.

**The cited art does not teach determining if data generated during detection of backside defects is representative of a signature of a chuck of a process tool.** Independent claim 20 recites in part: "determining if data generated during detection of the backside defects is representative of a signature of a chuck of a process tool."

Bultman does not disclose determining if data generated during detection of backside defects is representative of a signature of a chuck of a process tool. For example, Bultman states that "system 32 may be configured to determine a presence of defects on a back side of the specimen." (Bultman – col. 52, lines 35-37). Therefore, Bultman teaches detecting defects on a back side of a specimen. However, Bultman does not teach determining if data generated during detection of backside defects is representative of a signature of a chuck of a process tool, as recited in claim 20. Therefore, Bultman does not teach all limitations of claim 20.

The Office Action states that "Bultman et al. also teach...determining if the determined properties generated during the defect detection is representing the signature of the chuck of the detection system 32 (Fig.12)." (Office Action – page 8). However, there is nothing in Fig. 12 of

Bultman that teaches, inherently or otherwise, determining if data generated during detection of backside defects is representative of a signature of a chuck of system 32. In addition, system 32 is not a process tool, as recited in claim 20. As such, contrary to the assertion in the Office Action, Bultman does not teach determining if data generated during detection of backside defects is representative of a signature of a chuck of a process tool, as recited in claim 20.

For at least the aforementioned reasons, claims 1, 16, and 20 are not anticipated by the cited art. Therefore, claims dependent therefrom are also not anticipated by the cited art for at least the same reasons. Accordingly, removal of the § 102 rejections of claims 1, 3, 8-16, and 19-21 is respectfully requested.

## Allowable Subject Matter

Claims 2, 4-7, and 17 were objected to as being dependent upon a rejected base claim, but were deemed allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant appreciates the Examiner's indication of allowable subject matter and awaits allowance of the remaining claims in the case.

## CONCLUSION

This response constitutes a complete response to all issues raised in the Office Action mailed August 23, 2005. In view of the remarks presented herein, Applicants assert that pending claims 1-21 are in condition for allowance. If the Examiner has any questions, comments, or suggestions, the undersigned earnestly requests a telephone conference.

The Commissioner is authorized to charge any required fees or credit any overpayment to deposit account number 50-3268/5589-04901.

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